

QC
AUTO
C-105
7-0400-71
Iss. 6

AVRO AIRCRAFT LIMITED
INTER-DEPARTMENTAL MEMORANDUM

72.113-58/04
UNCLASSIFIED SECRET

Ref: 8300/11/J
Date: 18 April, 1958
To: Mr. C.V. Lindow
From: E.F. Burnett
Subject: Arrow 1 - Weight & Balance 7th Flight

ANALYZED

Herewith Weight and Balance data for Arrow 1 # 25201
7th flight.

Classification cancelled / changed to: UNCLASSIFIED

By authority of: DRDA 7/DARFT 5-8/DAS Eng 6-4-5

Date: 5 Nov 1992

Signature: B. Aubrey

Unit / Rank / Appointment: DSIS 3, Secretary CRAD HQ DRP

E.F. Burnett
E.F. Burnett
Weights Supervisor

MF3/ag

cc: Messrs. J.C. Floyd
R.K. Lindley
F.P. Mitchell
D.N. Seard
G. Hake
T. Roberts
J. Thorne
J. Lucas
A.J. Crust (7 copies for R.C.A.F.)
Central Files



53758
12496591

Arrow 1
Aircraft 25201
Date 18 April, 1958

Report 7-0400-71
Issue 6
Sheet 1

SECRET

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WEIGHT & BALANCE SUMMARY FLIGHT #7

	<u>WT. (lbs)</u>	<u>H. ARM</u>	<u>% M.A.C.</u>	
1. Condition at Start Up - OWE for #3 flight plus fuel as indicated on back Fuel Gauges	67516 67516	545.78 544.33	30.32 29.92	U/C Down U/C Up
2. Engine Run Up, checks, taxi				
3. Weight at take off (estimated)	66516 66516	545.87 544.39	30.35 29.94	U/C Down U/C Up
4. Weight at landing (estimated fuel distribution)	53000 53000	547.48 545.63	30.79 30.28	U/C Down U/C Up
5. Weight at landing (actual fuel distribution)	52844 52844	547.73 545.88	30.86 30.35	U/C Down U/C Up

BEFORE FLIGHT

ARROW 1
AIRCRAFT 25201
FLIGHT 7

DATE: 13 April, 1958
REPORT: 7-0400-71-6
SHEET: 2

~~RESTRICTED~~

~~SECRET~~

THE AIRCRAFT WAS NOT WEIGHED BEFORE FLIGHT

SCALE	KIT	CELL	LOAD	CORRECTION	WEIGHT
Wing Jacking Point - Port					
Wing Jacking Point - Stbd					
Nose Jacking Point					
TOTAL					

WT. (lbs) H. ARM (ins) % M.A.C.

Total Wt. Fwd Jacking Point
Total Wt. Aft Jacking Points
TOTAL as Weighed

U/C Dow

Plus Pilot +
Plus Observer +
Less Elevator Uplocks =
Less Intake Blanks =
Less Tailcone Blanks =
Less U/C Down Locks =

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NON CLASSIFIED

Gross Wt 67516 545.78 30.32 U/C Dow

Gross Wt 67516 544.83 29.92 U/C Up

Less Fuel (see Chart 1 below) 18920 540.75

Operational Wt Empty (See sheet 2 of weighing for 43596 547.74 30.87 U/C Dow
Flight #3)

Operational Wt Empty 43596 545.72 30.31 U/C Up

Before Flight

After Flight

#1 Chart - Fuel Gauge Reading ~~When Weighed~~

#2 Chart - Fuel Gauge Readings ~~When Weighed~~

Tanks	L.H. Deg.	R.H. Deg.	Total Deg.	Total lbs	H. ARM INS
1	-	244	244	1952	354.59
2	251	-	251	2008	435.23
3	142	141	283	2264	446.14
4	83	70	153	1224	502.57
5	159	136	295	2360	548.87
6	155	133	288	2304	589.11
7	232	270	502	4116	627.57
8	173	126	299	2392	675.52
Total				18920	540.75

Tanks	L.H. Deg.	R.H. Deg.	Total Deg.	Total lbs.	H. ARM INS
1	-	29	29	232	354.59
2	48	-	48	384	435.23
3	12	10	22	96	446.14
4	12	0	12	96	502.47
5	166	140	306	2448	548.87
6	11	0	11	180	589.11
7	43	10	53	124	627.57
8	55	5	60	480	675.52
Total				4248	547.62

Date: 16 April, 1958
 Sheet: 7-0400-71-6
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WEIGHT AND BALANCE CLEARANCE FOR ARROW 1

SECRET

Serial No. <u>25201</u>	C.G. Limits <u>28" - 31"</u>	Crew <u>1</u>		
Flight No. <u>7</u>	Gross Wt. <u>67516</u>	Fuel Load <u>10020</u> lb		
CONDITION	WEIGHT lb	H. ARM ins.	M.A.C. %	
<u>START UP</u>				
Gross Wt (from Sheet)	67516	545.73	30.32	U/C Down
Gross Wt (from Sheet)	67516	544.33	29.92	U/C Up
<u>TAKE-OFF</u>				
Gross Wt U/C Down (above)	67516	545.73		
Less Fuel - Start Up Taxi, Take-off	-1000	532.26		
Gross Wt. - Take off	66516	545.07	30.35	U/C Down
Less Moment 97,969 lb/in				
Gross Wt. Take off	66516	544.39	29.94	U/C Up
<u>MID-FLIGHT</u>				
Operational Wt Empty U/C Up (from sheet)	48596	545.72		
Tanks				
1	1096	354.59		
2	1128	435.23		
3 x 2	1272	446.14		
4 x 2	680	502.47		
5 x 2	2360	548.87		
6 x 2	1294	589.11		
7 x 2	2481	627.57		
8 x 2	1344	675.52		
Total Fuel	11663	541.48		
Gross Wt. - Mid Flight	60259	544.20	30.03	U/C Up
<u>LANDING</u>				
Operational Wt. Empty - U/C Down (from sheet)	48596	547.74		
Tanks				
1	241	354.59		
2	248	435.23		
3 x 2	279	446.14		
4 x 2	151	502.47		
5 x 2	2360	548.87		
6 x 2	284	589.11		
7 x 2	545	627.57		
8 x 2	295	675.52		
Total Fuel	4404	544.56		
Gross Wt. - Landing	53000	547.43	30.79	U/C Down
Less Moment 97,969 lb/in				
Gross Wt Landing	53000	545.63	30.23	U/C Up

Loading Conditions and C.G. Travel Approved _____

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Envelope obtained based on fuel
gauge readings after flight

Date:
Report:
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13 April, 1958
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WEIGHT AND BALANCE CLEARANCE FOR ARROW 1

SECRET

Serial No. <u>25201</u>	C.G. Limits <u>20" - 31"</u>	Crew <u>1</u>
Flight No. <u>7</u>	Gross Wt. <u>67516</u>	Fuel Load <u>10920</u> lb

CONDITION	WEIGHT lb	H. ARM ins.	M.A.C. %	
<u>START UP</u>				
Gross Wt (from Sheet)	67516	545.78	30.32	U/C Down
Gross Wt (from Sheet)	67516	544.33	29.92	U/C Up
<u>TAKE-OFF</u>				
Gross Wt U/C Down (above)	<u>67516</u>	<u>545.78</u>		
Less Fuel - Start Up Taxi, Take-off	<u>-1000</u>	<u>539.96</u>		
Gross Wt. - Take off	<u>66516</u>	<u>545.87</u>	30.35	U/C Down
Less Moment 97,969 lb/in				
Gross Wt. Take off	<u>66516</u>	<u>544.39</u>	29.94	U/C Up
<u>MID-FLIGHT</u>				
Operational Wt Empty U/C Up (from sheet)	—	—		
Tanks				
1		354.59		
2		435.23		
3 x 2		446.14		
4 x 2		502.47		
5 x 2		548.87		
6 x 2		589.11		
7 x 2		627.57		
8 x 2		675.52		
Total Fuel	—	—		
Gross Wt. - Mid Flight	—	—		U/C Up
<u>LANDING</u>				
Operational Wt. Empty - U/C Down (from sheet)	<u>48596</u>	<u>547.74</u>		
Tanks				
1	232	354.59		
2	384	435.23		
3 x 2	96	446.14		
4 x 2	96	502.47		
5 x 2	2448	548.87		
6 x 2	88	589.11		
7 x 2	424	627.57		
8 x 2	430	675.52		
Total Fuel	<u>4243</u>	<u>547.62</u>		
Gross Wt. - Landing	<u>52844</u>	<u>547.73</u>	30.86	U/C Down
Less Moment 97,969 lb/in				
Gross Wt Landing	<u>52844</u>	<u>545.08</u>	30.35	U/C Up

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Loading Conditions and C.G. Travel Approved _____